AMENDMENTS TO THE CLAIMS

1. (Currently amended) An imaging system for examining an object, said system comprising:

a probe array and a scanning mechanism, said probe array comprising:

at least one emitter of THz radiation, and

a plurality of photoconductive detectors for detecting radiation,

the probe array being configured such that radiation emitted by the at least one emitter is directed to the object and reflected back from the object to at least two of the plurality of detectors,

said scanning mechanism being configured to rotate or move said probe array such that a beam of the emitted radiation is scanned across the object, and reflected back to said at least two of the plurality of detectors.

2. (Previously presented) An imaging system as claimed in claim 1 wherein the at least one emitter comprises a frequency conversion member which is configured to emit radiation of the desired frequency in response to irradiation by radiation of a different frequency.

3. (Previously presented) An imaging system as claimed in claim 1 wherein the at least one emitter is a photoconductive device.

4. (Previously presented) An imaging system as claimed in claim 1 wherein the at least one emitter is configured to emit radiation having at least one frequency in the range 25 GHz to 100 THz.

5. (Previously presented) An imaging system as claimed in claim 1 wherein the at least one emitter is configured to emit pulses of radiation having a plurality of frequencies, at least one of said frequencies being in the range from 25 GHz to 100 THz.

6. (Previously presented) An imaging system as claimed in claim 1 wherein the array further comprises means for raster scanning the emitted radiation.

7. (Previously presented) An imaging system as claimed in claim 1 wherein the array comprises a single central emitter surrounded by the plurality of detectors.

8. (Previously presented) An imaging system as claimed in claim 7 wherein the plurality of detectors are directed towards a point such that in use the object is located at this point.

9. (Previously presented) An imaging system as claimed in claim 7 wherein the central emitter directs the emitted radiation into a directed beam.

10. (Previously presented) An imaging system as claimed in claim 1 wherein the array comprises a substantially equal number of emitters and detectors.

11. (Previously presented) An imaging system as claimed in claim 10 wherein the array is formed into a two dimensional array of emitters and detectors.

12. (Previously presented) An imaging system as claimed in claim 10 wherein the array is formed into a one dimensional stack of interleaved emitters and detectors.

13. (Previously presented) An imaging system as claimed in claim 12 wherein the emitters are arranged in use to form an extended focus of emitted radiation substantially parallel to the array.

14. (Previously presented) An imaging system as claimed in claim 12 wherein the array is raster scanned by linear translation of the stack.

15. (Previously presented) An imaging system as claimed in claim 12 wherein the array is raster scanned by rotation about an axis through the stack of emitters and detectors.

16. (Previously presented) An imaging system as claimed in claim 12 wherein each emitter and detector is mounted within a self contained housing module.

17. (Previously presented) An imaging system as claimed in claim 16 wherein each module is capable of forming a stack with similar modules.

Claim 18. (Canceled).

19. (Previously presented) An imaging system as claimed in claim 2 wherein the array further comprises a lens array to focus the irradiating radiation onto the at least one emitter and plurality of detectors.

20. (Previously presented) An imaging system as claimed in claim 2 wherein the irradiating radiation is supplied by means of a number of optical fibres.

21. (Previously presented) An imaging system as claimed in claim 20 wherein a separate optical fibre supplies irradiating radiation to a single emitter/detector.

22. (Previously presented) An imaging system as claimed in claim 20 wherein the array further comprises a lens array that is located between the optical fibres and the at least one emitter and plurality of detectors and wherein only a proportion of the total number of emitters and detectors are in use at any given time.

23. (Previously presented) An imaging system as claimed in claim 2 wherein the array further comprises a THz transmitting array to couple in or out any THz radiation.

24. (Previously presented) An imaging system as claimed in claim 23 wherein the THz transmitting array is constructed from any of the following; polythene, polypropylene, silicon, alumina, aluminum, aluminum nitride, aluminum carbide, silicon nitride, germanium, paraffin-wax or any other suitable polymer, ceramic or semiconductor.

25. (Previously presented) An imaging system as claimed in claim 1, further comprising a signal processor for analyzing the radiation detected by the probe array.

26. (Previously presented) An imaging system for examining an object as claimed in claim 25 further comprising a source of e/m radiation for irradiating the probe array.

27. (Previously presented) An imaging system as claimed in claim 26 wherein the source provides a beam of radiation and the system further comprises a series of beam-splitters and fibre couplers, each beam-splitter being arranged to couple a proportion of the beam of radiation via a fibre coupler into an optical fibre such that in use the optical fibre irradiates the probe array.

28. (Previously presented) An imaging system as claimed in claim 26 wherein the source provides a beam of radiation and the system further comprises a lensing array, the array being arranged in use to couple a proportion of the beam into an optical fibre such that the fibre irradiates the probe array.

29. (Previously presented) An imaging system as claimed in claim 25 wherein the probe array is configured as a hand-held unit and the source and signal processor are housed in a base unit, the hand-held unit and base unit being connected via optical fibre.

Claims 30-33. (Canceled).

34. (Previously presented) An imaging system as claimed in claim 1 wherein only a proportion of the total number of emitters and detectors are in use at any given time.

35. (Currently amended) An imaging system for examining an object, said system comprising:

a probe array and a scanning mechanism, said probe array comprising:

at least one emitter of THz radiation, and

a plurality of photoconductive detectors for detecting radiation,

the probe array being configured such that radiation emitted by the at least one emitter is directed to the object and reflected back from the object to at least two of the plurality of detectors;

said scanning mechanism being configured to rotate or move said object such that a beam of the emitted radiation is scanned across the object, and reflected back to said at least two of the plurality of detectors.

36. (Previously presented) An imaging system as claimed in claim 35 wherein the at least one emitter comprises a frequency conversion member which is configured to emit radiation of the desired frequency in response to irradiation by radiation of a different frequency.

37. (Previously presented) An imaging system as claimed in claim 35 wherein the at least one emitter is a photoconductive device.

38. (Previously presented) An imaging system as claimed in claim 35 wherein the at least one emitter is configured to emit radiation having at least one frequency in the range 25 GHz to 100 THz.

39. (Previously presented) An imaging system as claimed in claim 35 wherein the at least one emitter is configured to emit pulses of radiation having a plurality of frequencies, at least one of said frequencies being in the range from 25 GHz to 100 THz.

40. (Previously presented) An imaging system as claimed in claim 35 wherein the array further comprises means for raster scanning the emitted radiation.

41. (Previously presented) An imaging system as claimed in claim 35 wherein the array comprises a single central emitter surrounded by the plurality of detectors.

42. (Previously presented) An imaging system as claimed in claim 41 wherein the plurality of detectors are directed towards a point such that in use the object is located at this point.

43. (Previously presented) An imaging system as claimed in claim 41 wherein the central emitter directs the emitted radiation into a directed beam.

44. (Previously presented) An imaging system as claimed in claim 35 wherein the array comprises a substantially equal number of emitters and detectors.

45. (Previously presented) An imaging system as claimed in claim 44 wherein the array is formed into a two dimensional array of emitters and detectors.

46. (Previously presented) An imaging system as claimed in claim 44 wherein the array is formed into a one dimensional stack of interleaved emitters and detectors.

47. (Previously presented) An imaging system as claimed in claim 46 wherein the emitters are arranged in use to form an extended focus of emitted radiation substantially parallel to the array.

48. (Previously presented) An imaging system as claimed in claim 46 wherein the array is raster scanned by linear translation of the stack.

49. (Previously presented) An imaging system as claimed in claim 46 wherein the array is raster scanned by rotation about an axis through the stack of emitters and detectors.

50. (Previously presented) An imaging system as claimed in claim 46 wherein each emitter and detector is mounted within a self contained housing module.

51. (Previously presented) An imaging system as claimed in claim 50 wherein each module is capable of forming a stack with similar modules.

52. (Currently amended) An imaging system as claimed in claim 35 wherein only a proportion of the total number of emitters and detectors are in use at any given time.

53. (Previously presented) An imaging system as claimed in claim 36 wherein the array further comprises a lens array to focus the irradiating radiation onto the at least one emitter and plurality of detectors.

54. (Previously presented) An imaging system as claimed in claim 36 wherein the irradiating radiation is supplied by means of a number of optical fibres.

55. (Previously presented) An imaging system as claimed in claim 54 wherein a separate optical fibre supplies irradiating radiation to a single emitter/detector.

56. (Previously presented) An imaging system as claimed in claim 54 wherein the array further comprises a lens array that is located between the optical fibres and the at least one emitter and plurality of detectors and wherein only a proportion of the total number of emitters and detectors are in use at any given time.

57. (Previously presented) An imaging system as claimed in claim 36 wherein the array further comprises a THz transmitting array to couple in or out any THz radiation.

58. (Previously presented) An imaging system as claimed in claim 57 wherein the THz transmitting array is constructed from any of the following; polythene, polypropylene, silicon, alumina, aluminum, aluminum nitride, aluminum carbide, silicon nitride, germanium, paraffin-wax or any other suitable polymer, ceramic or semiconductor.

59. (Previously presented) An imaging system as claimed in claim 35 further comprising a signal processor for analyzing the radiation detected by the probe array.

60. (Previously presented) An imaging system as claimed in claim 59 further comprising a source of e/m radiation for irradiating the probe array.

61. (Previously presented) An imaging system as claimed in claim 60 wherein the source provides a beam of radiation and the system further comprises a series of beam-splitters and fibre couplers, each beam-splitter being arranged to couple a proportion of the beam of radiation via a fibre coupler into an optical fibre such that in use the optical fibre irradiates the probe array.

62. (Previously presented) An imaging system as claimed in claim 60 wherein the source provides a beam of radiation and the system further comprises a lensing array, the array being arranged in use to couple a proportion of the beam into an optical fibre such that the fibre irradiates the probe array.

63. (Previously presented) An imaging system as claimed in claim 59 wherein the probe array is configured as a hand-held unit and the source and signal processor are housed in a base unit, the hand-held unit and base unit being connected via optical fibre.